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**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Docket Number (Optional)

RL-2000

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on \_\_\_\_\_

Signature \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Application Number

10/654,203

Filed

September 3, 2003

First Named Inventor

James A. Rakowski

Art Unit

1793

Examiner

Jessee R. Roe

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐

applicant/inventor.

☐

assignee of record of the entire interest.

See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.  
(Form PTO/SB/96)

☒

attorney or agent of record.

Registration number 57,741

☐

attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 \_\_\_\_\_



Signature

Robert J. Toth

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Telephone number

April 22, 2010

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below\*.

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\*Total of 1 forms are submitted.

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Rakowski

Application Serial. No. 10/654,203

Filing Date: September 3, 2003

Art Unit 1793

Examiner: Jessee R. Roe

Confirmation No. 5809

OXIDATION RESISTANT FERRITIC  
STAINLESS STEELS

Attorney Docket No. RL-2000

REMARKS FOR PRE-APPEAL BRIEF CONFERENCE

April 22, 2010

VIA EFS-WebMail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action mailed November 23, 2009 ("Office Action") and the Advisory Action mailed January 8, 2010 ("Advisory Action"), Applicant submits the following remarks and arguments for a pre-appeal brief conference for the above-identified patent application ("Subject Application"). The issues addressed herein are ripe for appeal in accordance with 37 C.F.R. § 41.31(a)(1), the claims having been subject to at least two rejections. A petition under 37 C.F.R. § 1.136(a) for a two-month extension of the shortened statutory period set forth in the Office Action, a notice of appeal under 37 C.F.R. § 41.31(a), and a Pre-Appeal Brief Request for Review (form PTO/SB/33) are submitted with these remarks. The Commissioner is hereby authorized to charge Deposit Account No. 11-1110 for all fees necessary for a pre-appeal brief conference.

Claims 1-6, 9-11, 13, 14, 16, 18, 20-28, and 99-101 are pending in the Subject Application. Claims 7, 8, 12, 15, 17, 19, and 29-98 were previously canceled. Claims 6, 14, 23, 24, 27, and 28 currently stand withdrawn. Claims 1-5, 9-11, 13, 16, 18, 20-22, 25-26, and 99-101 are currently under examination. Claims 1, 10, 11, and 99 are independent claims.

Claims 11, 13, 16, 18, 20-22, and 25-26 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly not meeting the written description requirement. Claims 99-101 stand

rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. The claims under examination also stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over US-4097311 ("Ishibashi") and/or Szummer<sup>1</sup> in view of any one of JP 10-280103 (Ono), WO 99/10554 (Linden), JP 06-172933 (Uematsu), or JP 09-209092 (Matsui).

**I. Claims Rejections under 35 U.S.C. § 112, first paragraph**

Applicant hereby incorporates-by-reference the remarks presented in *section III.A* (pp. 10-12) of the Response dated January 22, 2010. The Office asserts that the recitation of "a ferritic stainless steel article having an uncoated electropolished oxidation resistant surface" lacks written description support. The Office asserts that the specification does not provide support for an uncoated electropolished surface because the ferritic stainless steel recited in the present claims would be coated by an oxide scale. However, an oxide scale that chemically develops on a surface is **not** a coating. A coating is a layer of a substance that is physically applied onto a substrate. In contrast, a scale is a layer that chemically develops on the surface and in the near-surface region of a material. A scale is not physically applied onto the surface of a substrate like a coating. Rather, a scale is produced as the chemical elements that constitute a material chemically react at the material's surface with species such as oxygen in the surrounding environment. In this manner, the surface and near-surface regions of the material chemically transform into a scale layer under certain conditions. As such, a scale is physically and chemically different than and distinct from a coating and, indeed, the specification does not recite the term "coated" or related terms.

Accordingly, Applicant respectfully maintains that the Office is applying an improper *in haec verba* requirement. Applicant notes that the specification does not literally recite "uncoated". But, compliance with the written description requirement does not require literal support using the same terms in the specification and in the claims, provided that a person skilled in the art could reasonably conclude that the inventor had possession of the claimed invention. MPEP § 2163(I).

Here, a person skilled in the art would have understood the inventor to have been in possession of a method for making a ferritic stainless steel article having an uncoated electropolished oxidation resistant surface at least based on Example 1 in the specification (¶¶ [0052]-[0058]). A review of this example shows that an article was produced by

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<sup>1</sup> Szummer et al., "Hydrogen surface effects in ferritic stainless steels", J. Alloys and Compounds, 293-295 (1999) 356-360

electropolishing an uncoated ferritic stainless steel. Subsequent oxidation testing demonstrated that the uncoated electropolished article developed the oxide scale recited in the present claims. The article was, in fact, never coated and, therefore, it is an uncoated article. Further, the fact that the surface of the ferritic stainless steel article develops a particular oxide scale under certain conditions does not make the article "coated". This is because a physically applied coating layer and a chemically developed scale layer are different and distinct. Thus, claims 11, 13, 16, 18, 20-22, and 25-26 comply with § 112, first paragraph.

**II. Claims Rejections under 35 U.S.C. § 112, second paragraph**

Applicant hereby incorporates-by-reference the remarks presented in *section III.B* (pp. 12-13) of the Response dated January 22, 2010. The Office asserts that claims 99-101 are indefinite because it is allegedly unclear whether or not aluminum is included in the oxide scale recited in claim 99. Applicant submits that the Office's apparent confusion is due to a typographical error in claim 99, which Applicant corrected with the amendment filed on January 22, 2010. However, the Office did not enter the amendment. Nevertheless, Applicant respectfully submits that the specification clearly describes the recited oxide scale as including chromium, iron, and aluminum.

For example, paragraph [0058] of the specification describes scanning auger microscopy analysis of the oxide scales that formed on the uncoated and exposed surfaces of samples of an electropolished ferritic stainless steel heated at 750°C and 850°C. This analysis "revealed that the oxide scale is of a single phase and contains significant concentrations of aluminum, iron, and chromium...." Further, "it appeared that electropolishing promotes the formation of [the] aluminum-rich oxide scale...." (¶ [0058]). In addition, paragraph [0064] of the specification states that "structural characterization of the thin aluminum-rich oxides formed on electropolished [ferritic stainless steel] alloy at high temperatures...confirmed that the oxides include a significant level of iron and chromium, along with aluminum...." The aluminum-rich oxide scale that formed on the electropolished ferritic stainless steel was shown to have a chemical composition and a crystal structure that are different than the oxide scale that formed on non-electropolished samples of an identical ferritic stainless steel (¶¶ [0065]-[0068]). Thus, claims 99-101 comply with § 112, second paragraph.

**III. Claim Rejections under 35 U.S.C. § 103(a)**

Applicant hereby incorporates-by-reference the remarks presented in *section IV* (pp. 13-21) of the Response dated January 22, 2010. The Office maintains that the methods recited in

certain claims of the Subject Application would have been obvious in view Ishibashi. These claims include at least one of the following features: an exposed electropolished surface of a ferritic stainless steel that, under certain conditions, develops an aluminum-rich oxide scale comprising chromium and iron and having a hematite structure; and/or an uncoated electropolished surface. It is not technologically possible to achieve these features with a coated surface as described in Ishibashi.

The Office argues that Ishibashi discloses a substantially similar stainless steel composition and the same processing steps. This is incorrect. Ishibashi discloses a method for making a solar collector material by mechanically polishing, chemically abrading, and electropolishing to produce a flattened mirror-like stainless steel surface. An oxide coating layer is then adhered to the substrate. The electropolished surface of the substrate in Ishibashi is not left exposed, but instead is actively coated with an applied layer of a metal oxide material. As a result, it is physically and chemically impossible for the steel disclosed in Ishibashi to chemically react with oxygen in the surrounding atmosphere and develop a scale as recited in the claims of the Subject Application.

Likewise, Ishibashi does not suggest an uncoated and electropolished material because Ishibashi expressly teaches applying an oxide coating. The Office argues that the intermediate product of Ishibashi would be electropolished and uncoated. However, this argument is irrelevant because Ishibashi expressly discloses applying an oxide coating to the so-called intermediate product. Indeed, a prior art reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. MPEP § 2141.02.VI. Here, because the intermediate product of Ishibashi is coated as part of the disclosed fabrication process, Ishibashi, considered as a whole, does not teach or suggest the chemical development of an oxide scale as recited in the claims of the Subject Application.

Further, as explained in detail in Applicant's response filed January 22, 2010, the oxide coating of Ishibashi does not include aluminum and has a spinel structure, whereas the scale recited in the claims of the Subject Application includes aluminum and has a hematite structure. Thus, the methods recited in claims 1, 10, and 11 would not have been obvious in view of Ishibashi.

The Office asserts that the methods recited in the present claims would have been obvious over Szummer in view of Ono, Linden, Uematsu, or Matsui. Applicant notes that Linden and Uematsu teach 3-20 weight percent aluminum and 1-4.5 weight percent aluminum, respectively. In contrast, claims 1, 10, 11, and 99 recite either 0.2 to 1.0 weight percent

aluminum or 0.4 to 0.8 weight percent aluminum. Therefore, Applicant respectfully requests withdrawal of the rejections under § 103(a) based on Szummer in view of Linden or Uematsu.

Further, the Office asserts that the aluminum-rich oxide scale feature recited in the present claims would be inherent in Szummer in view of the secondary references, regardless of whether the cited references recognize these features. However, as set forth in MPEP § 2141.02(V), "obviousness cannot be predicated on what is not known at the time an invention is made, even if the inherency of a certain feature is later established." Rather, in order to rely on some allegedly inherent feature of the prior art when establishing a *prima facie* case of obviousness, the allegedly inherent feature must have been taught or suggested in the prior art at the time that the claimed invention was made. *In re Rijckaert*, 9 F.2d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993).

Here, Applicant submits that the high temperature oxidation resistance feature and the aluminum-rich oxide scale feature recited in the present claims were not known before the Subject Application. See the Declaration of Michael P. Brady, Ph.D., submitted August 23, 2007, which provides uncontraverted independent expert testimony that the features recited in the present claims would have been unexpected before the Subject Application. The Office has provided no references or other evidence that shows otherwise. Therefore, a *prima facie* case of obviousness has not been established. MPEP § 2141.02(V).

A method for studying the surface microstructure of ferritic stainless steels after hydrogen charging (as apparently suggested by Szummer in view of the secondary references) would not render obvious a method for making a ferritic stainless steel article having an oxidation resistant surface that develops a distinct aluminum-rich oxide scale under high temperature oxidation conditions (as recited in the present claims), "even if the inherency of a certain feature is later established." MPEP § 2141.02(V).

Respectfully submitted,

April 22, 2010

Date

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